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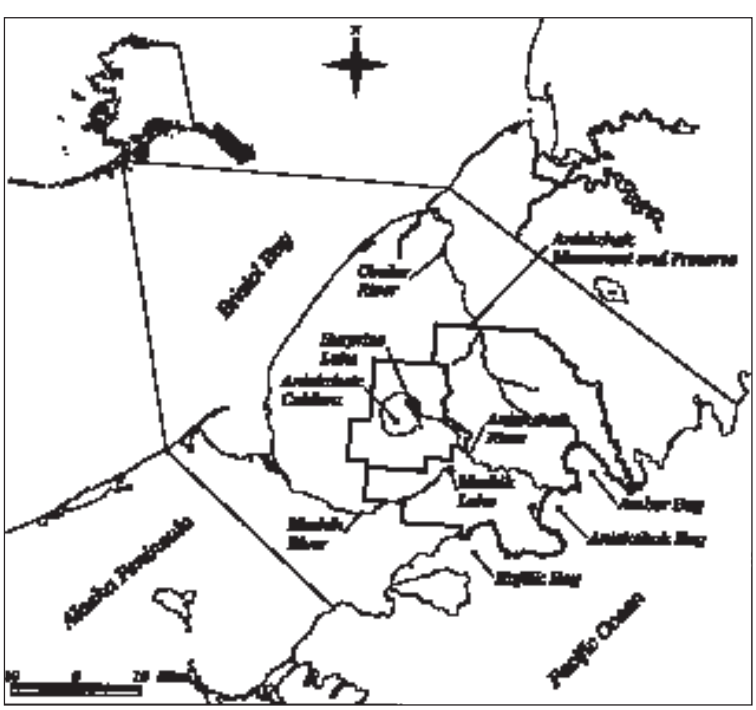
Fire and Flood

Archeological Survey in the Dynamic Aniakchak National Monument and Preserve

Aniakchak National Monument and Preserve is centered around Aniakchak Caldera and Aniakchak River on the lower Alaska Peninsula. The Alaska Peninsula is an arm of land in southwestern Alaska that reaches toward the Aleutian Islands, sharing with them a stormy climate and bountiful marine resources. The Yupik Eskimo, Aleut, and Alutiiq people who inhabited the region in the past made expert use of these resources, as do their descendants today.

The monument and preserve owes its existence, in part, to the popularization of the Aniakchak Caldera by the exploration and writings of Father Bernard R. Hubbard. Also known as "the Glacier Priest," Hubbard was a Jesuit professor who visited the area in the 1930s. It was an article about Hubbard written during this time that caught the eye of former NPS Director Horace M. Albright, who initiated the process that culminated in 1980 with the signing of the Alaska National Interest Lands Conservation Act. This established the Aniakchak National Monument and Preserve at its present boundaries.



Alaska Peninsula with Aniakchak National Monument and Preserve. The Monument encompasses the caldera, while the Preserve includes the Pacific coast and major river systems. Map by William Lee.

Catastrophic volcanic events define Aniakchak National Monument and Preserve, and must be understood to put the search for past human habitation of the region in perspective. The Aniakchak Caldera was formed approximately 3,400 years ago with the eruption of the Aniakchak stratovolcano. The resultant pyroclastic flow, which extended as far as 50 kilometers away, covered low-lying valleys close to the mountain with up to 75 meters of ash. Ash flow exposures have been found along both the Bering Sea coast north of the caldera as well as sections of Aniakchak and Kujulik Bay on the Pacific coast in the south, indicating flow movement over mountain passes 260 meters high in the Aleutian Range. The explosion formed a caldera that slowly filled with water, resulting in a lake over 160 meters deep and approximately 38 square kilometers in size. Sometime between 3200 and 900 B.P. another eruption caused the catastrophic draining of the lake, cutting a 300-meter deep notch in the caldera wall and forming the modern channel of the Aniakchak River. These events undoubtedly had a profound effect upon the prehistoric inhabitants of the region, and were taken into account when planning an archeological research strategy for the monument and preserve.

The central Alaska Peninsula has historically received little archeological attention, consequently a cultural history for the monument and preserve is unknown. The only archeological surveys in the monument and preserve before 1997 consisted of one day's survey and testing on the single previously known archeological site near the mouth of the Aniakchak River, and a brief multidisciplinary survey of the Preserve's intertidal area performed after the Exxon Valdez oil spill. The lack of archeological attention for the area is not surprising, given the current low population, severity of climate, and expense of transporting and operating crews in this remote region. It was because of this dearth of information that the National Park Service instituted a four-year research project in 1997 which included two years of archeological survey of the Aniakchak National Monument and Preserve. Its purpose was to obtain baseline information on the historic and prehistoric use of the

Aniakchak Bay with sow brown bear with cubs in foreground, and vegetated paleo beach berms and relic island landform in background. Photo by Mike Hilton.

region for consideration in NPS management decisions and operations, in compliance with NPS management responsibilities as outlined in Section 110 of the National Historic Preservation Act.

Survey during 1997 and 1998 included shared use of a USGS helicopter and zodiac and kayak transport to survey a variety of locations in the interior and on the Pacific coast. Approximately 2,000 acres of Monument and Preserve were surveyed at a reconnaissance level for evidence of past cultural activity, with subsurface testing in high probability locations. Thirty-five additional archeological sites were found and extensively documented, including seventeen prehistoric, fourteen historic, and four with both historic and prehistoric components. Seven prehistoric sites that could be considered villages (locations with more than five housepits) were discovered, two of them with actively eroding midden.

Considerable time was invested in 1998 collecting geomorphic data to establish ages for the catastrophic flood and the formation of the suite of beach dunes at the heads of the bays, and in archeological testing to find sites below the 3400 BP eruption, for it is the interaction between these dynamic events and the human population of the region that is of greatest scientific and popular interest.

The catastrophic flood is important both because of its potential impact on the villages in the region, and on the development of the Aniakchak River's important sockeye salmon run. Because of the salmon's need to spawn in a lake, the salmon run must have developed after the flood and resultant modern caldera lake. Dating of the catastrophic flood is currently in progress, utilizing tephra (airfall volcanic ash) samples collected from various age landforms, wood and shell samples collected from the base of dunes, and peat cores from old flood channels.

Early results from the project are encouraging. Radiocarbon evidence collected in 1997 shows the contemporaneity of village sites located at the mouth of the Aniakchak River and at Meshik Lake, which together with a previously discovered village site on the lower Meshik River suggest that at 1300 BP this corridor constituted an important travel route across the Alaska Peninsula. Geomorphic work on beach dune formation suggests that several village sites were closer to the coast when occupied, with their current location up rivers and in lagoons an artifact of subsequent beach dune formation. Tephra samples collected from dated sections over the last two years are being used to develop a regional tephra chronology. Locating pre-3400 BP sites has proven less productive. Due in part to the difficulty of testing through the two to three meters of reworked pyroclastic flow that usually covers high-probability early locations, no sites have yet been found that predate 2000 BP.

Artifact and faunal samples collected in 1998 are beginning to delineate past regional cultural affinities and subsistence practices. Analysis of the accumulated data from the 1997 and 1998 archeological field seasons will allow better management of the cultural resources of Aniakchak National Park and Preserve, as well as greatly increase our knowledge of the history and prehistory of this little-known region.

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NPS employee Mike Hilton in Aniakchak Caldera, with Surprise Lake in the background. Notch in caldera's far wall, approximately 1,000 feet deep, is outlet for the lake. Photo by the author.